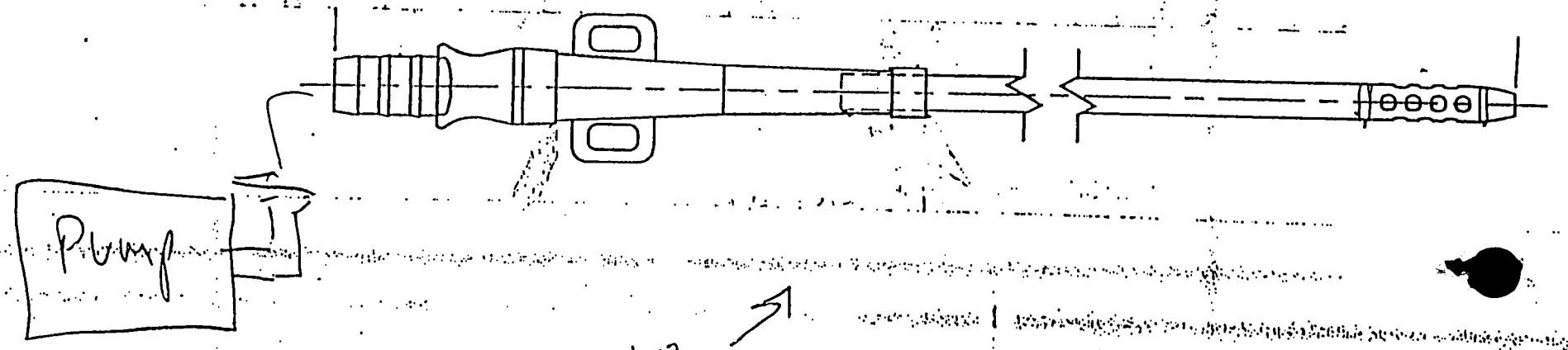
FIG 1



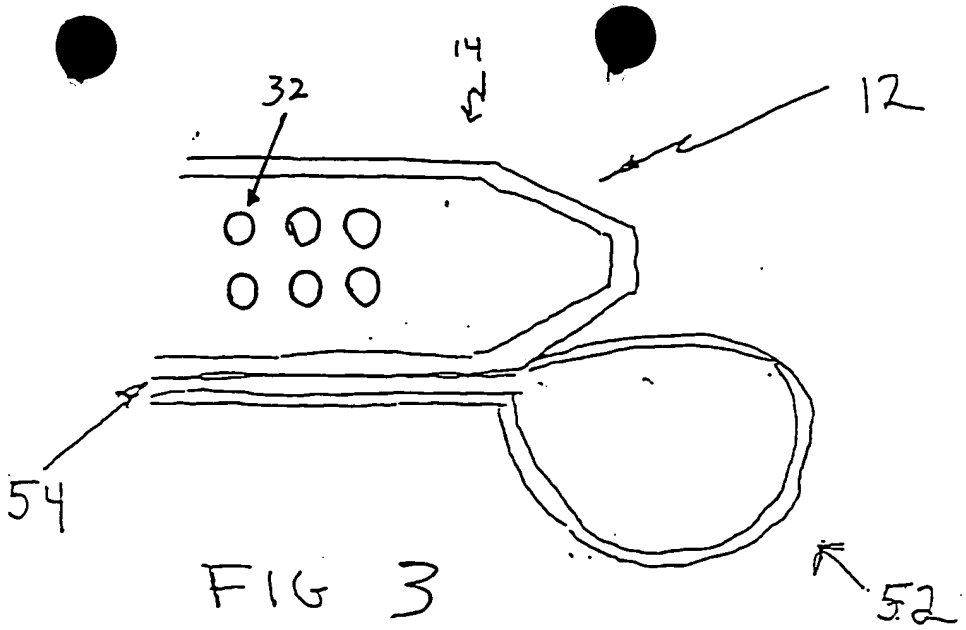


FIG 3

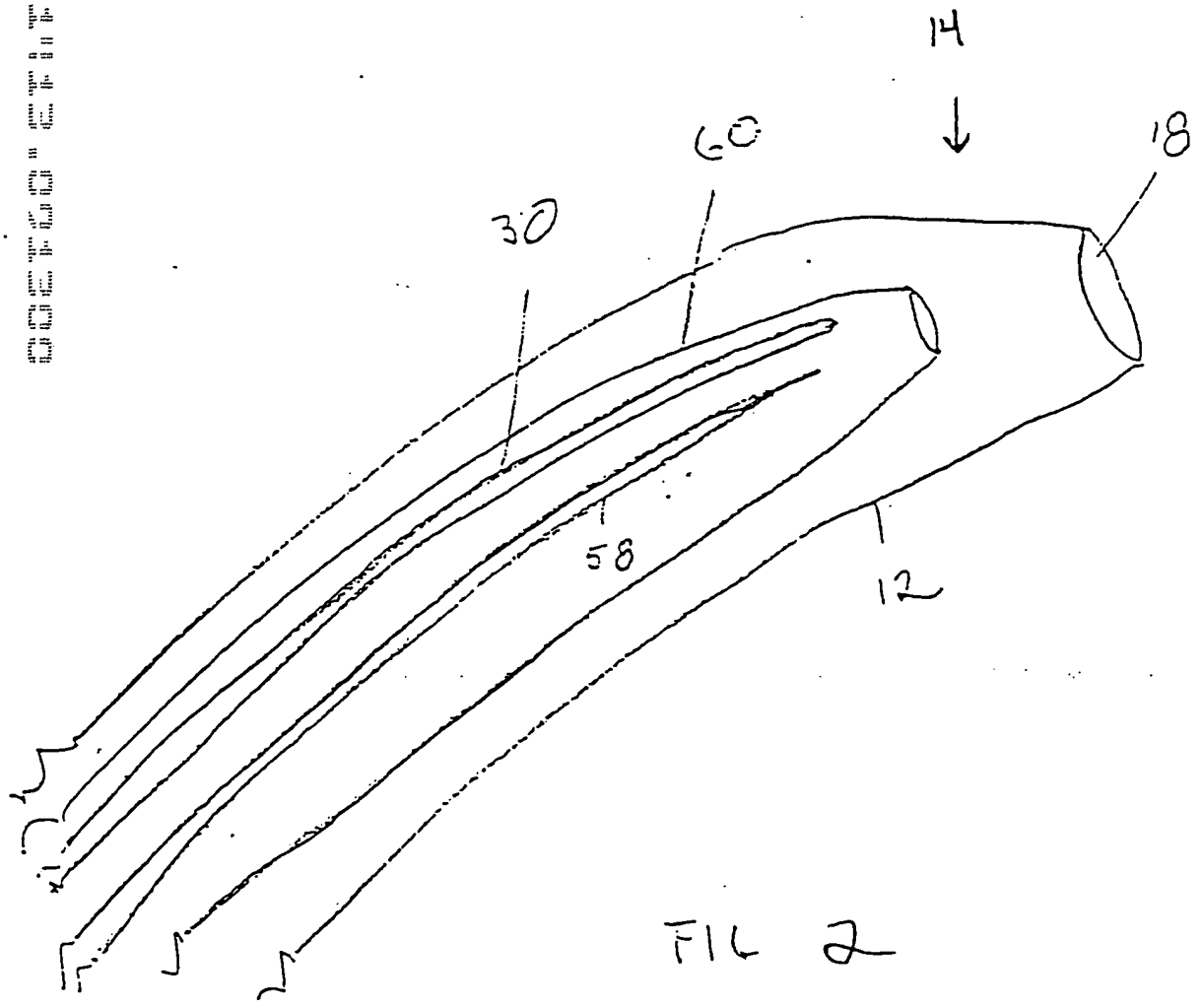
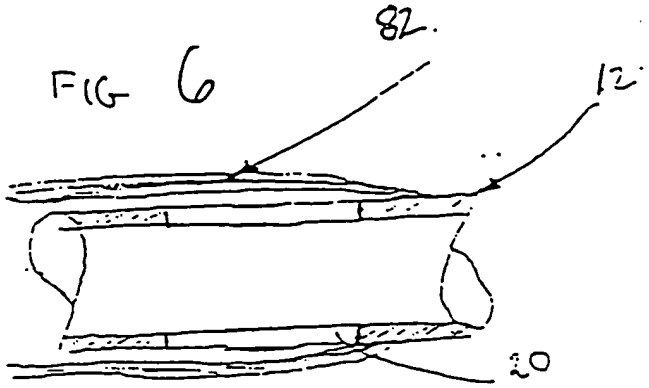


FIG 2

FIG 6



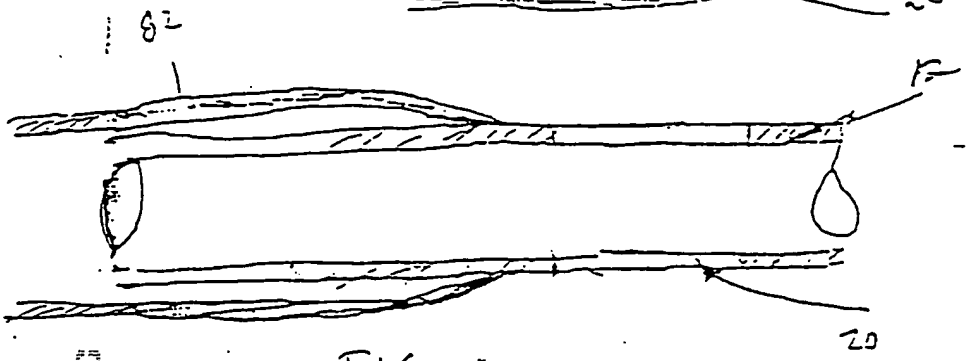


FIG 7

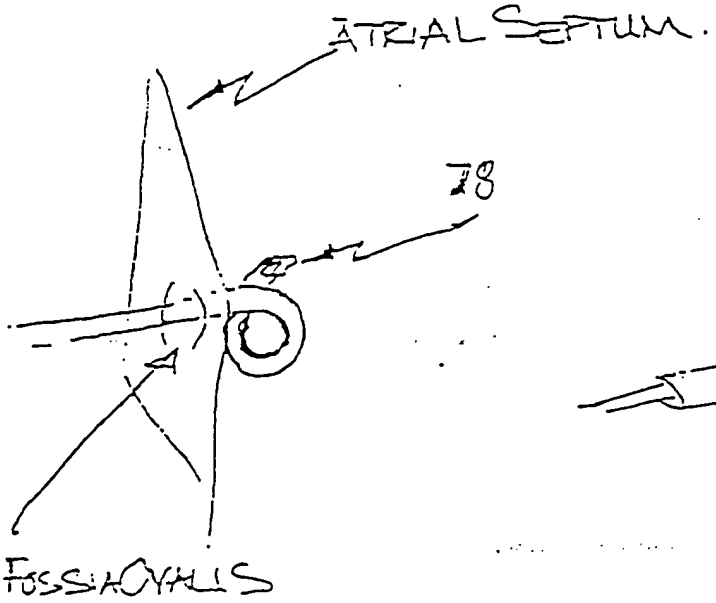


FIG 4

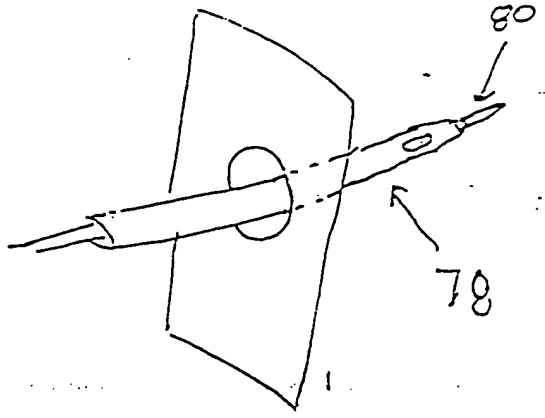


FIG 5

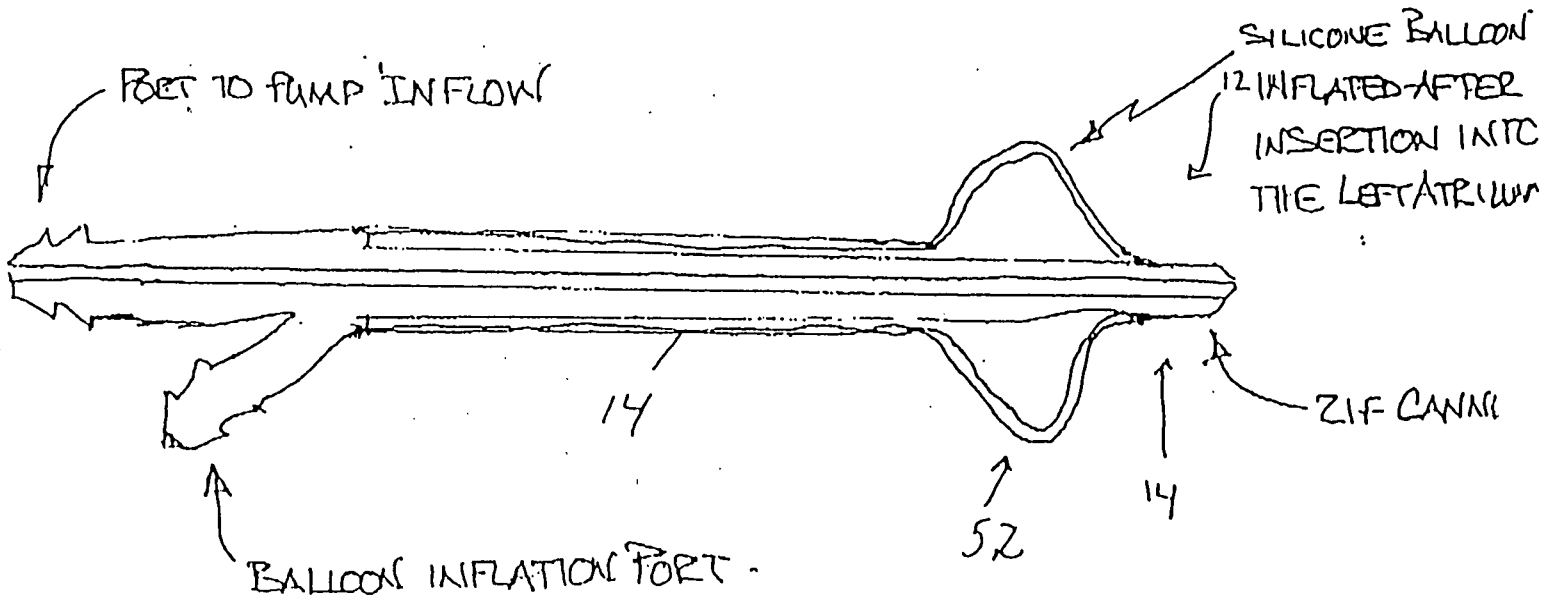


FIG 8

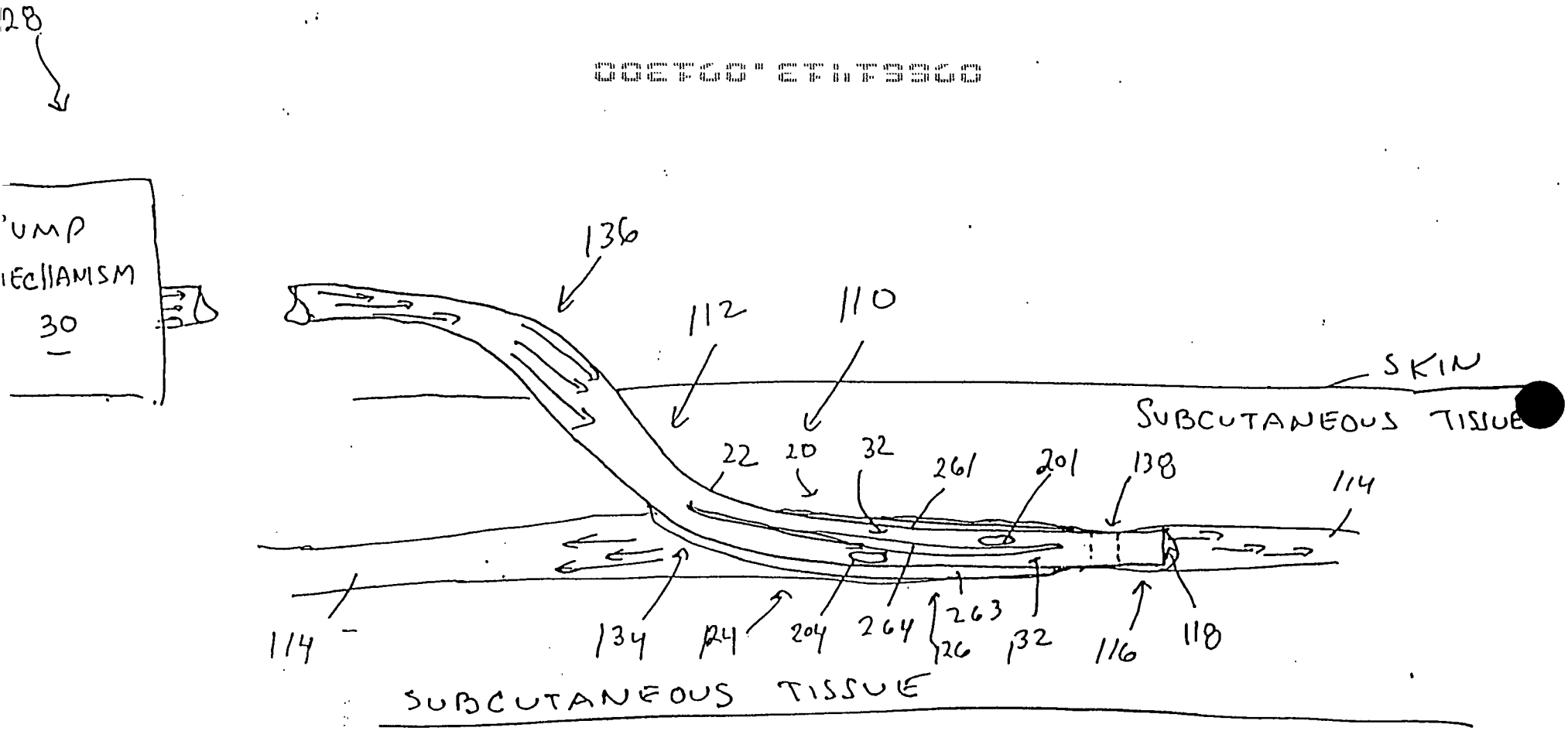

28
UMP
IECHANISM
30
136
112
110
SKIN
SUBCUTANEOUS TISSUE
22
20
32
261
201
138
114
114
134
24
204
264
263
26
32
116
118
SUBCUTANEOUS TISSUE

FIG 9

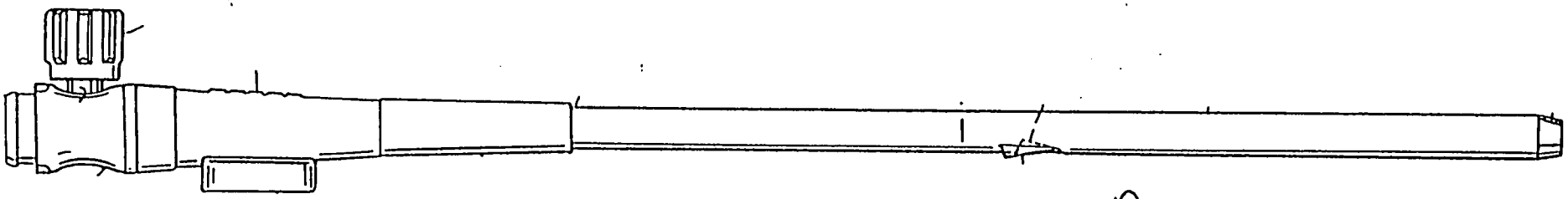


Fig. 10

110

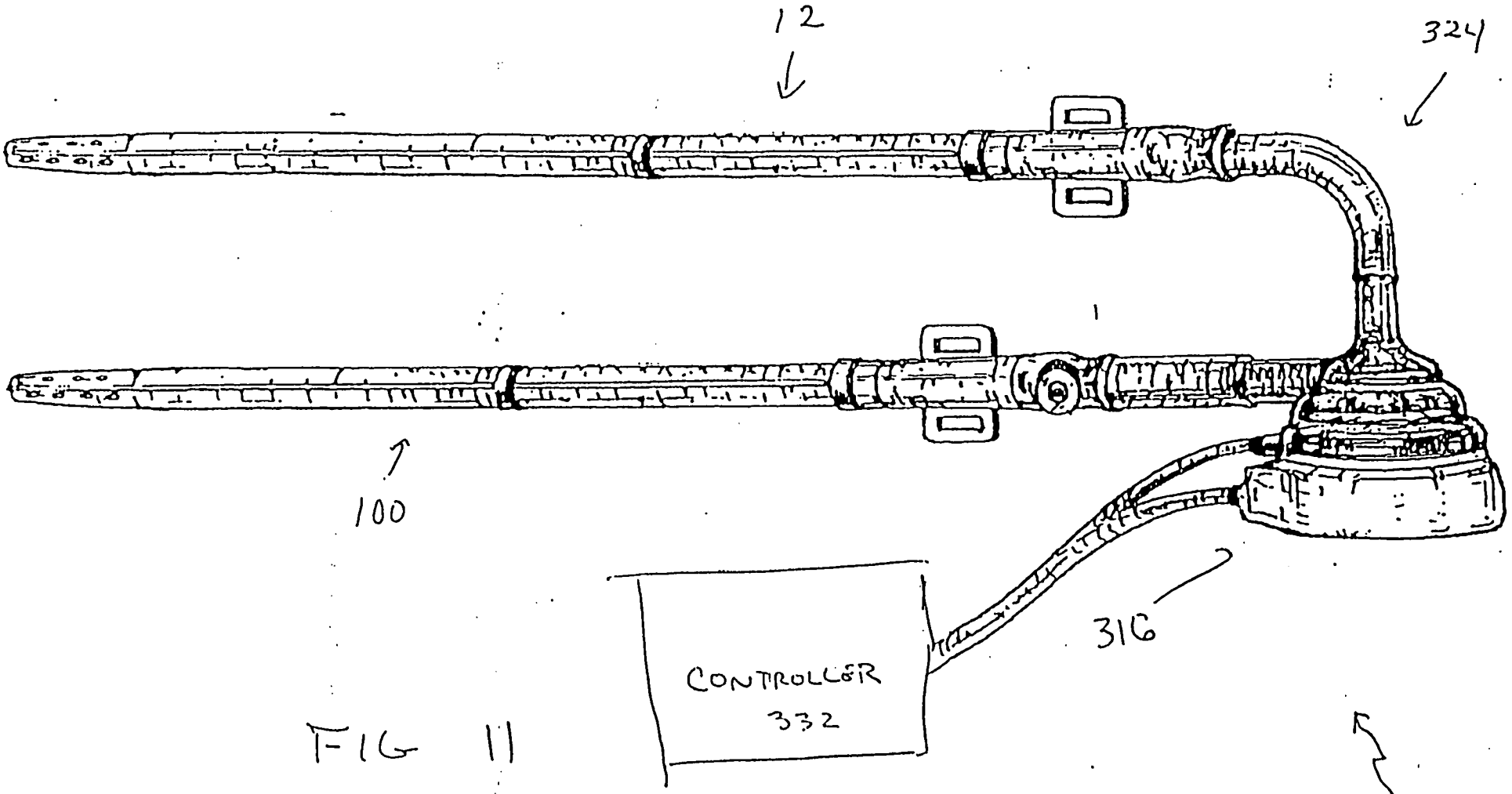
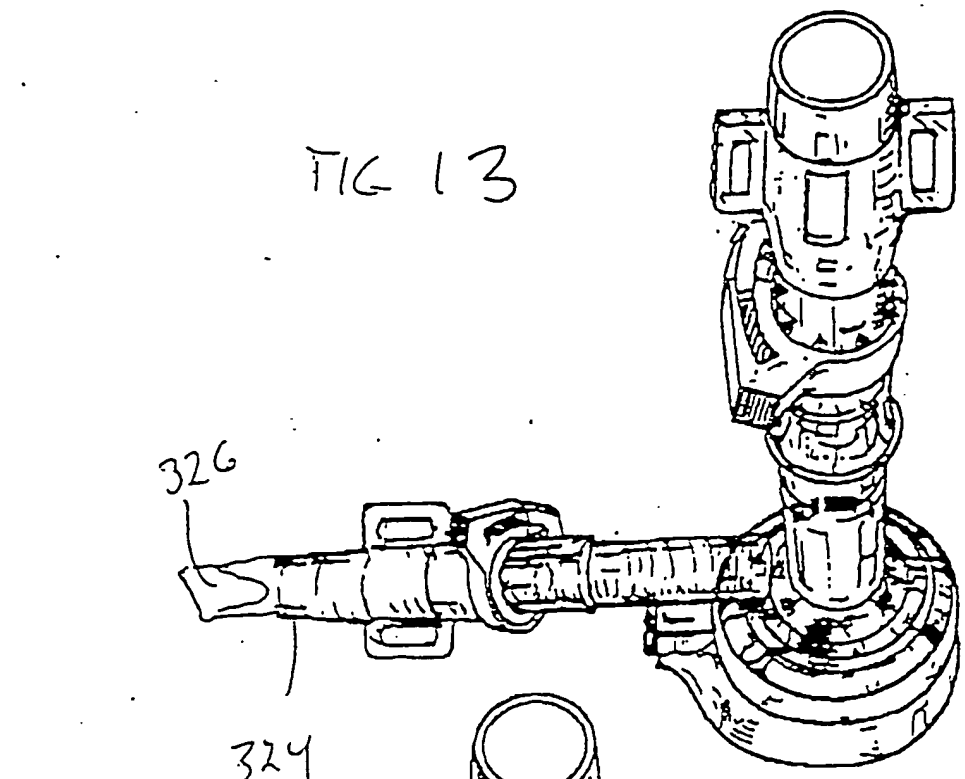


FIG 11
System 300

FIG 13



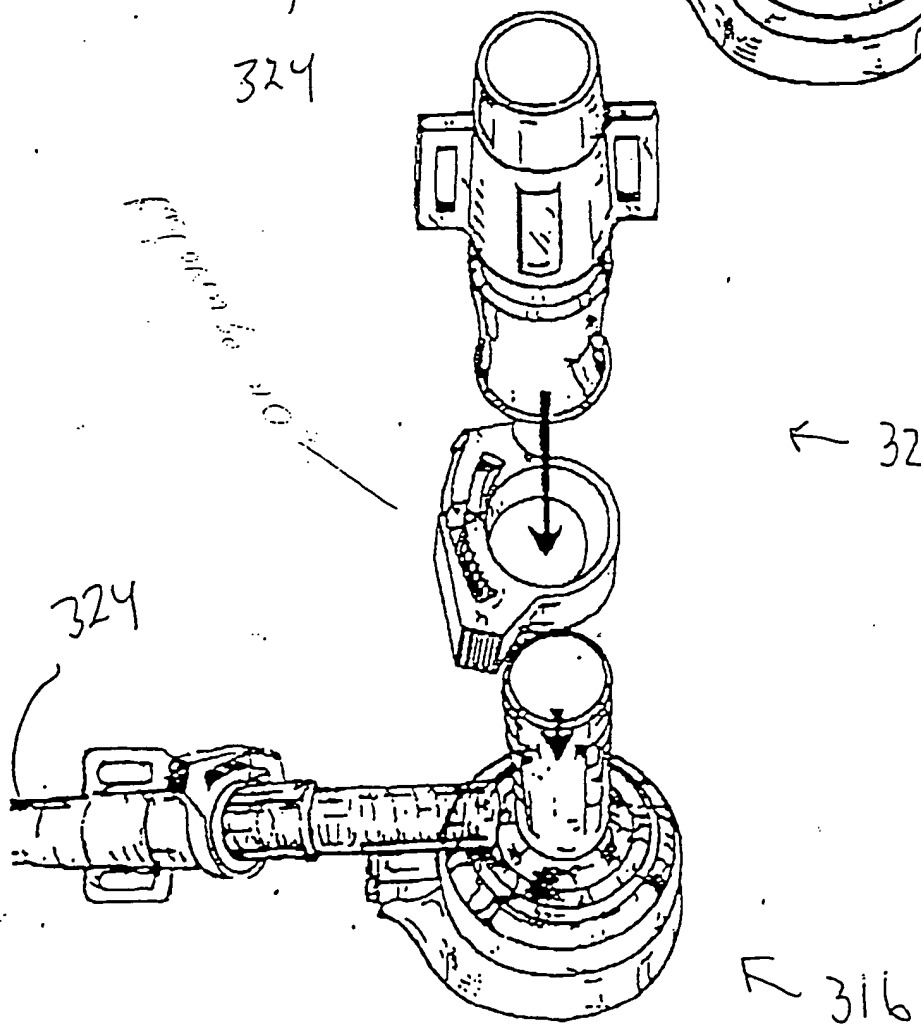


FIG 12

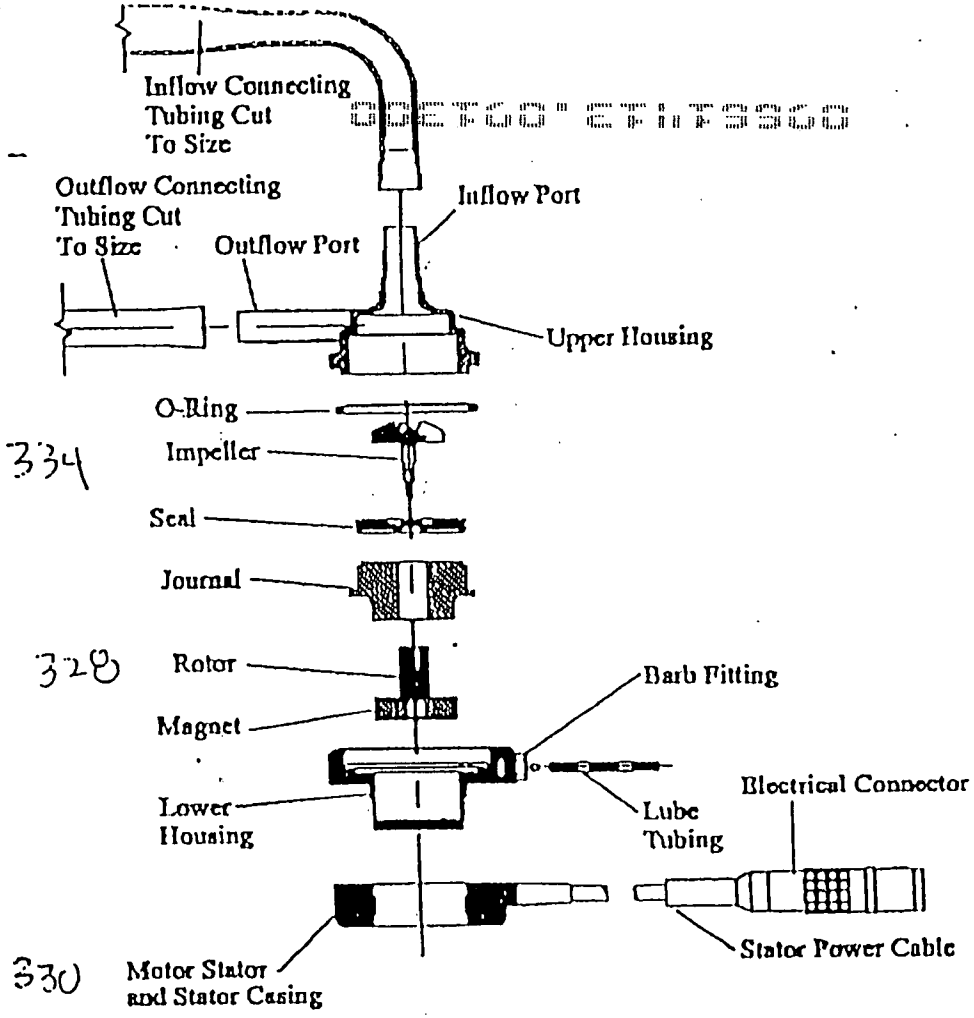
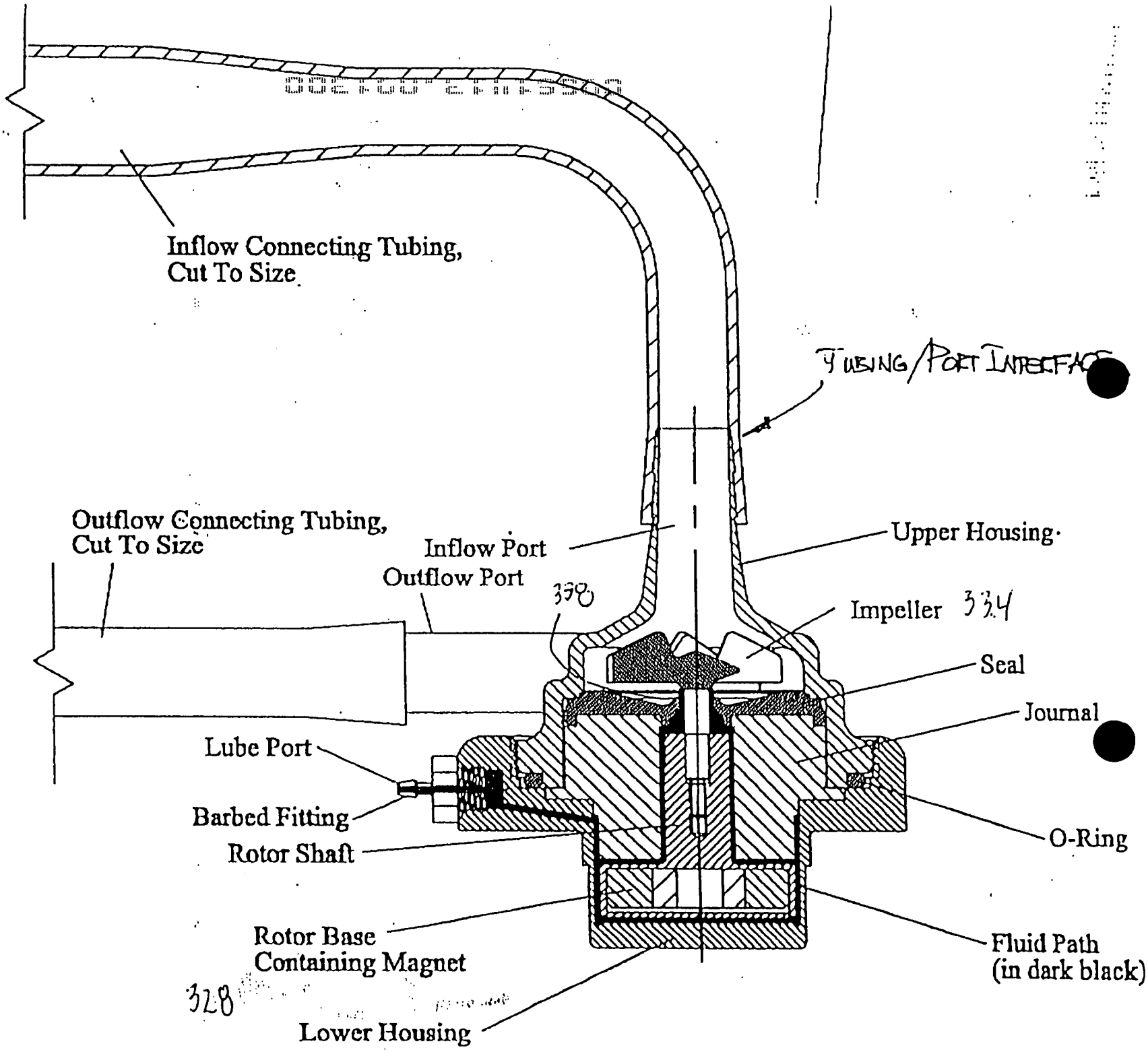

Inflow Connecting
Tubing Cut
To Size
Outflow Connecting
Tubing Cut
To Size
Outflow Port
Inflow Port
Upper Housing
O-Ring
334
Impeller
Seal
Journal
328
Rotor
Magnet
Barb Fitting
Lower
Housing
Lube
Tubing
Electrical Connector
330
Motor Stator
and Stator Casing
Stator Power Cable

FIG
14


Inflow Connecting Tubing,
Cut To Size
TUBING/PORT INTERFACE
Outflow Connecting Tubing,
Cut To Size
Inflow Port
Outflow Port
338
Upper Housing
Impeller 334
Seal
Journal
Lube Port
Barbed Fitting
Rotor Shaft
O-Ring
Rotor Base
Containing Magnet
328
Fluid Path
(in dark black)
Lower Housing

IG 15

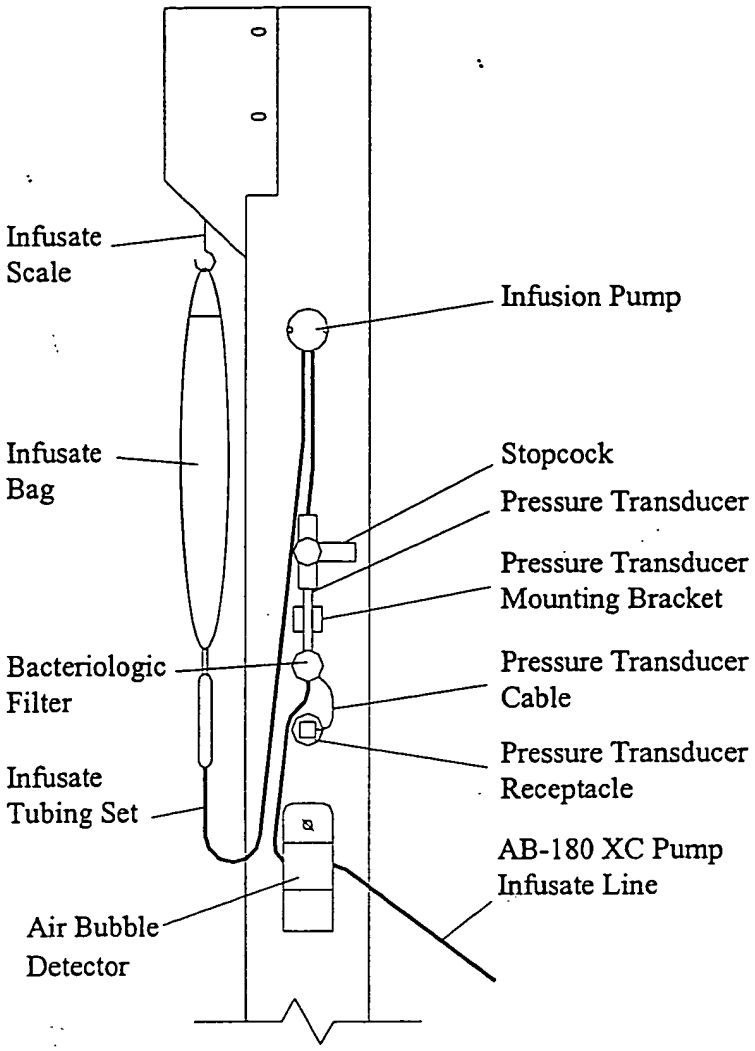

Infusate
Scale
Infusion Pump
Infusate
Bag
Stopcock
Pressure Transducer
Pressure Transducer
Mounting Bracket
Bacteriologic
Filter
Pressure Transducer
Cable
Pressure Transducer
Receptacle
Infusate
Tubing Set
AB-180 XC Pump
Infusate Line
Air Bubble
Detector

Figure 15a

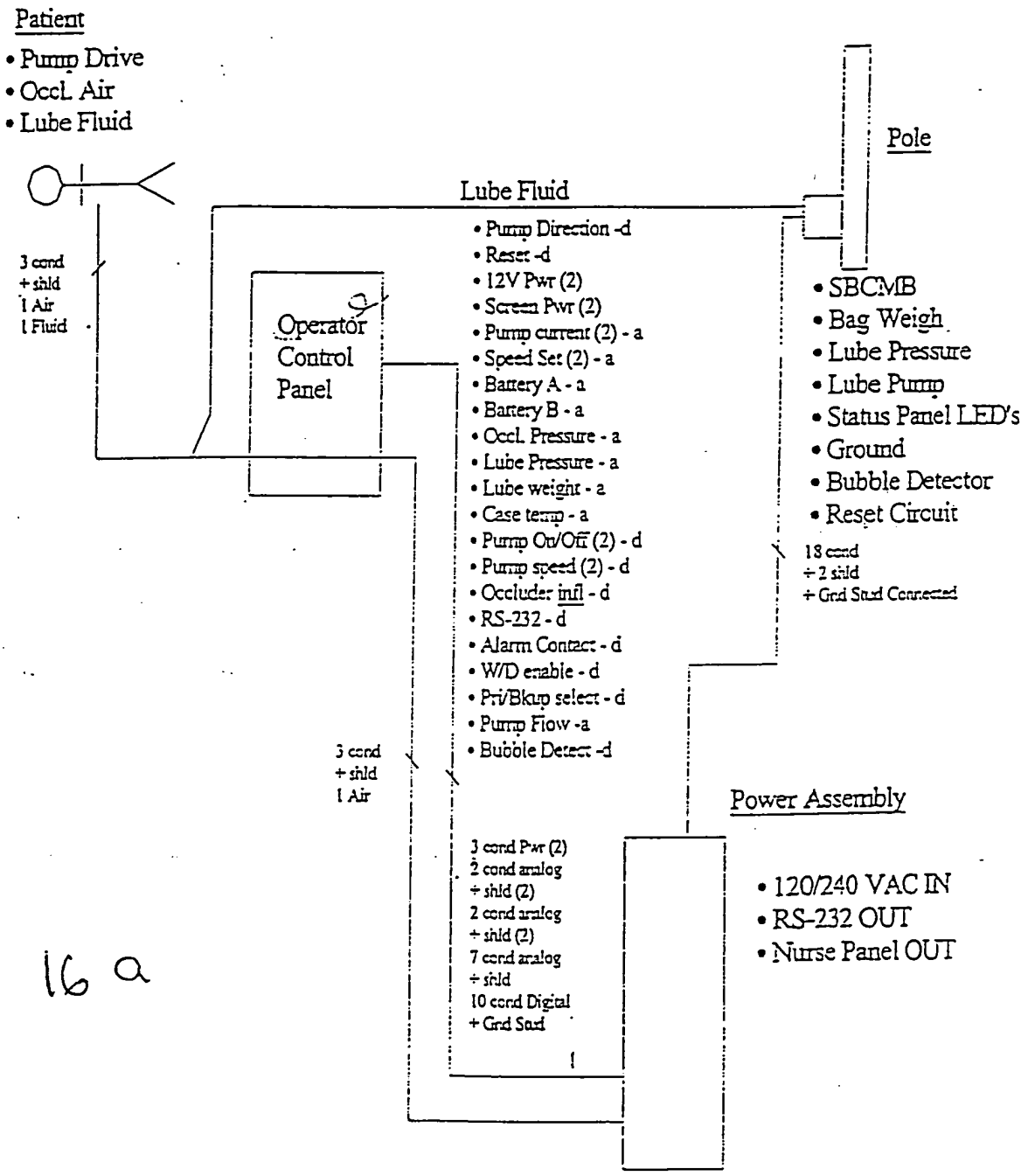

Patient
• Pump Drive
• Occl. Air
• Lube Fluid
3 cond
+ shld
1 Air
1 Fluid
Lube Fluid
Operator
Control
Panel
• Pump Direction -d
• Reset -d
• 12V Pwr (2)
• Screen Pwr (2)
• Pump current (2) - a
• Speed Set (2) - a
• Battery A - a
• Battery B - a
• Occl. Pressure - a
• Lube Pressure - a
• Lube weight - a
• Case temp - a
• Pump On/Off (2) - d
• Pump speed (2) - d
• Occluder infl - d
• RS-232 - d
• Alarm Contact - d
• W/D enable - d
• Pri/Bkup select - d
• Pump Flow -a
• Bubble Detect -d
Pole
• SBCMB
• Bag Weigh
• Lube Pressure
• Lube Pump
• Status Panel LED's
• Ground
• Bubble Detector
• Reset Circuit
18 cond
+ 2 shld
+ Grd Stud Connected
3 cond
+ shld
1 Air
3 cond Pwr (2)
2 cond analog
+ shld (2)
2 cond analog
+ shld (2)
7 cond analog
+ shld
10 cond Digital
+ Grd Stud
Power Assembly
• 120/240 VAC IN
• RS-232 OUT
• Nurse Panel OUT

FIG 16a

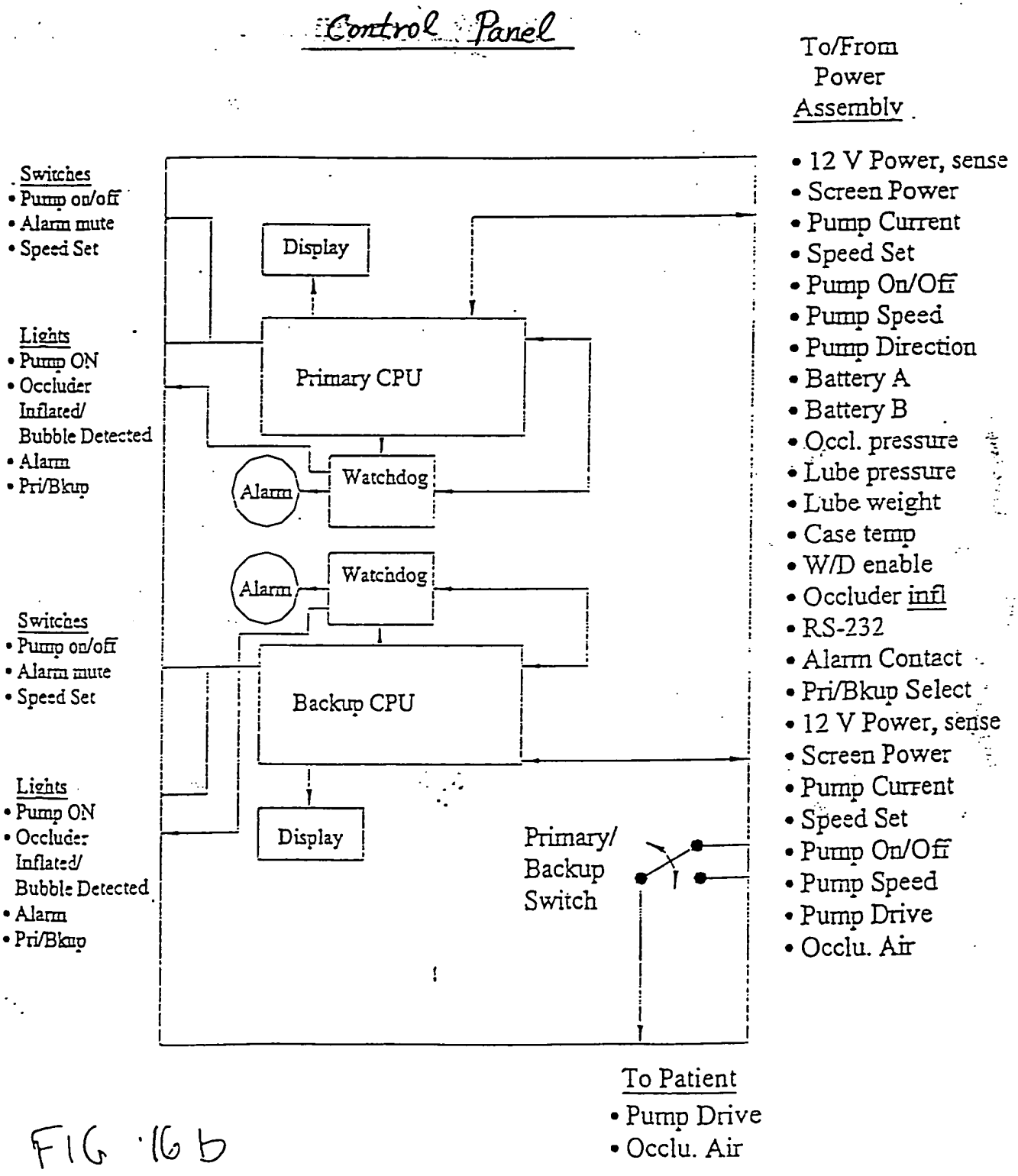

Control Panel
To/From Power Assembly
• 12 V Power, sense
• Screen Power
• Pump Current
• Speed Set
• Pump On/Off
• Pump Speed
• Pump Direction
• Battery A
• Battery B
• Occl. pressure
• Lube pressure
• Lube weight
• Case temp
• W/D enable
• Occluder infl
• RS-232
• Alarm Contact
• Pri/Bkup Select
• 12 V Power, sense
• Screen Power
• Pump Current
• Speed Set
• Pump On/Off
• Pump Speed
• Pump Drive
• Occlu. Air
Switches
• Pump on/off
• Alarm mute
• Speed Set
Lights
• Pump ON
• Occluder Inflated/ Bubble Detected
• Alarm
• Pri/Bkup
Switches
• Pump on/off
• Alarm mute
• Speed Set
Lights
• Pump ON
• Occluder Inflated/ Bubble Detected
• Alarm
• Pri/Bkup
Display
Primary CPU
Alarm
Watchdog
Alarm
Watchdog
Backup CPU
Display
Primary/ Backup Switch
To Patient
• Pump Drive
• Occlu. Air

FIG. 16b

Power Assembly

FIG 16C

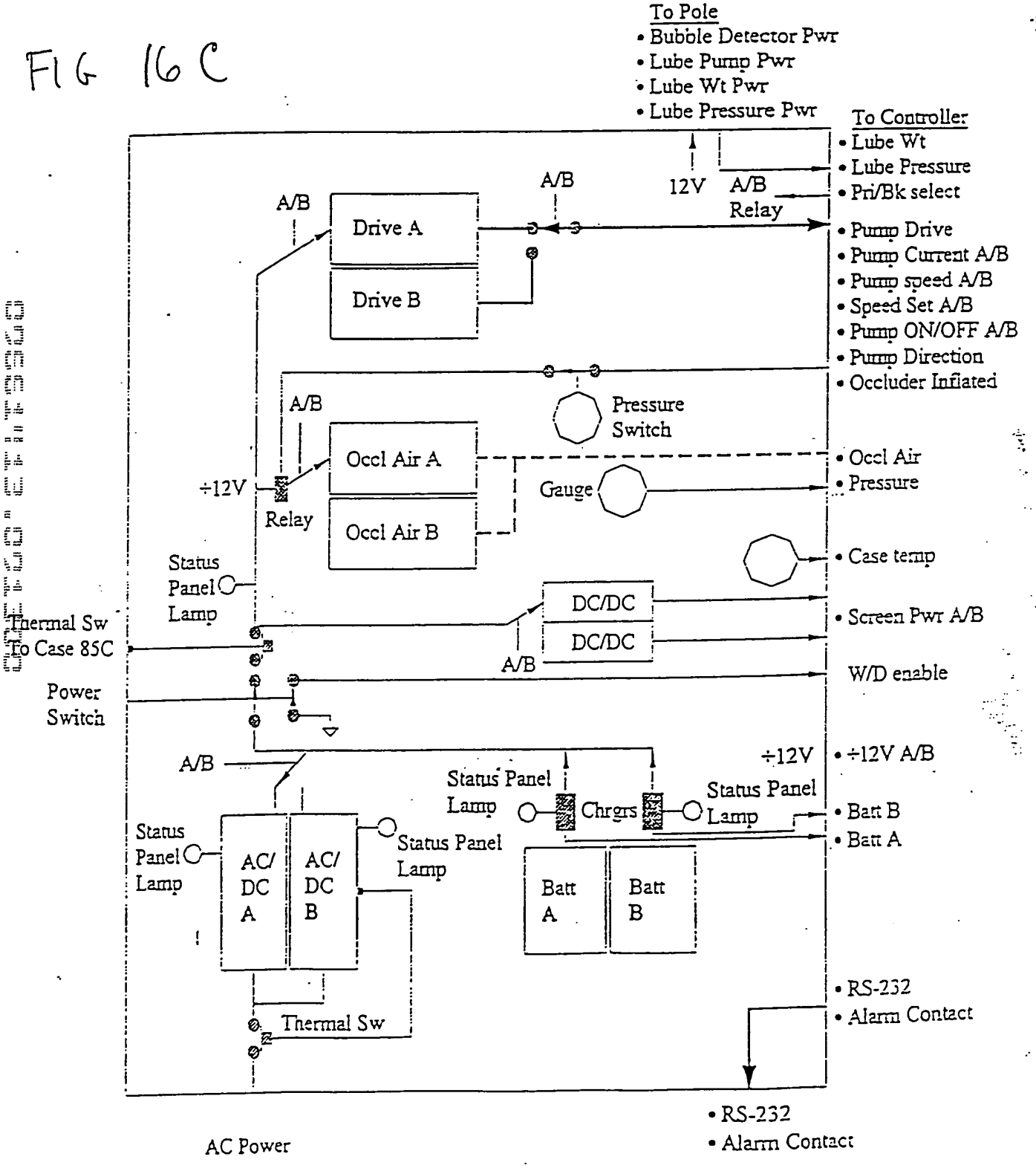
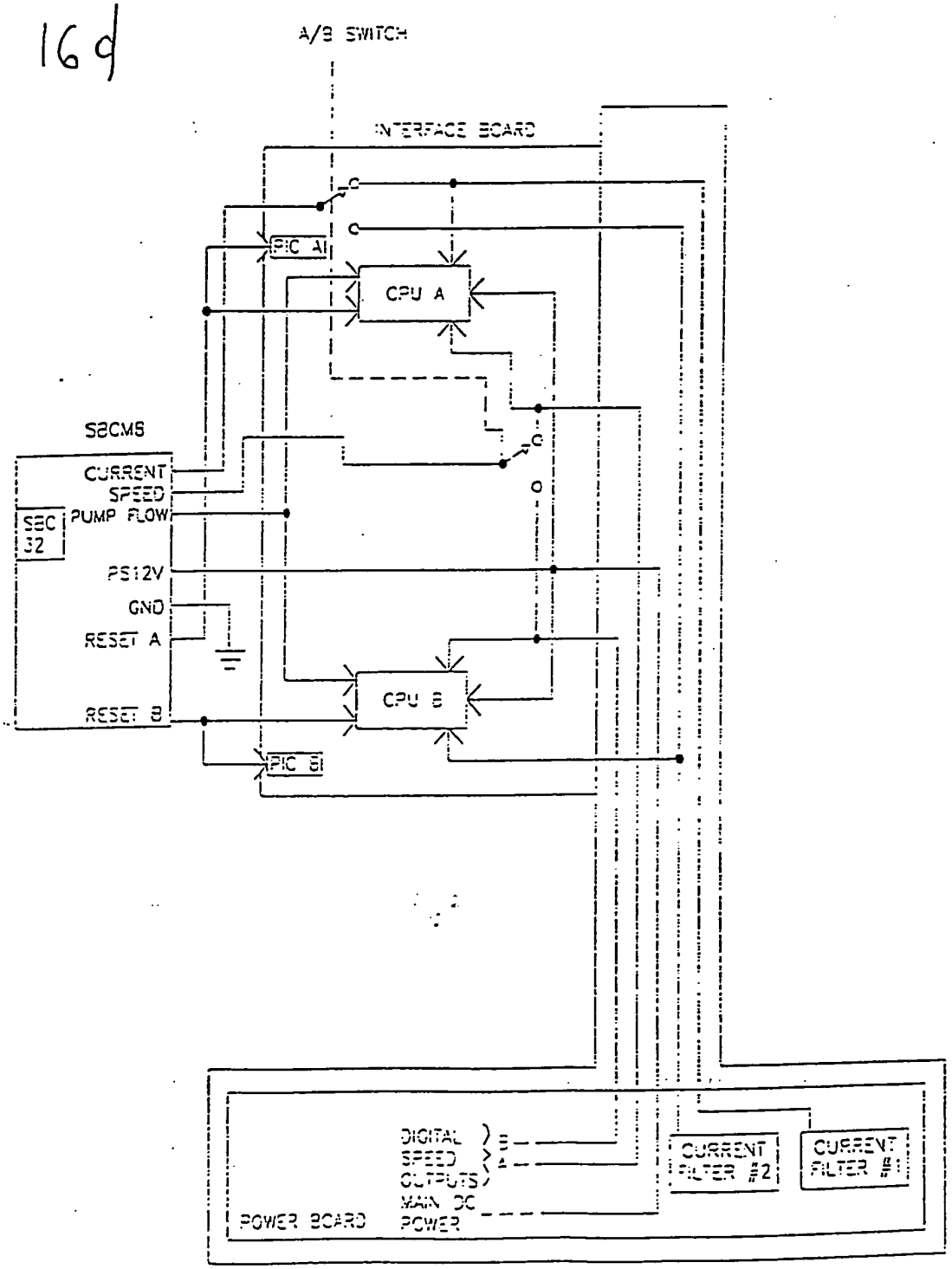


FIG 16d

SECM8 CONNECTION DIAGRAM



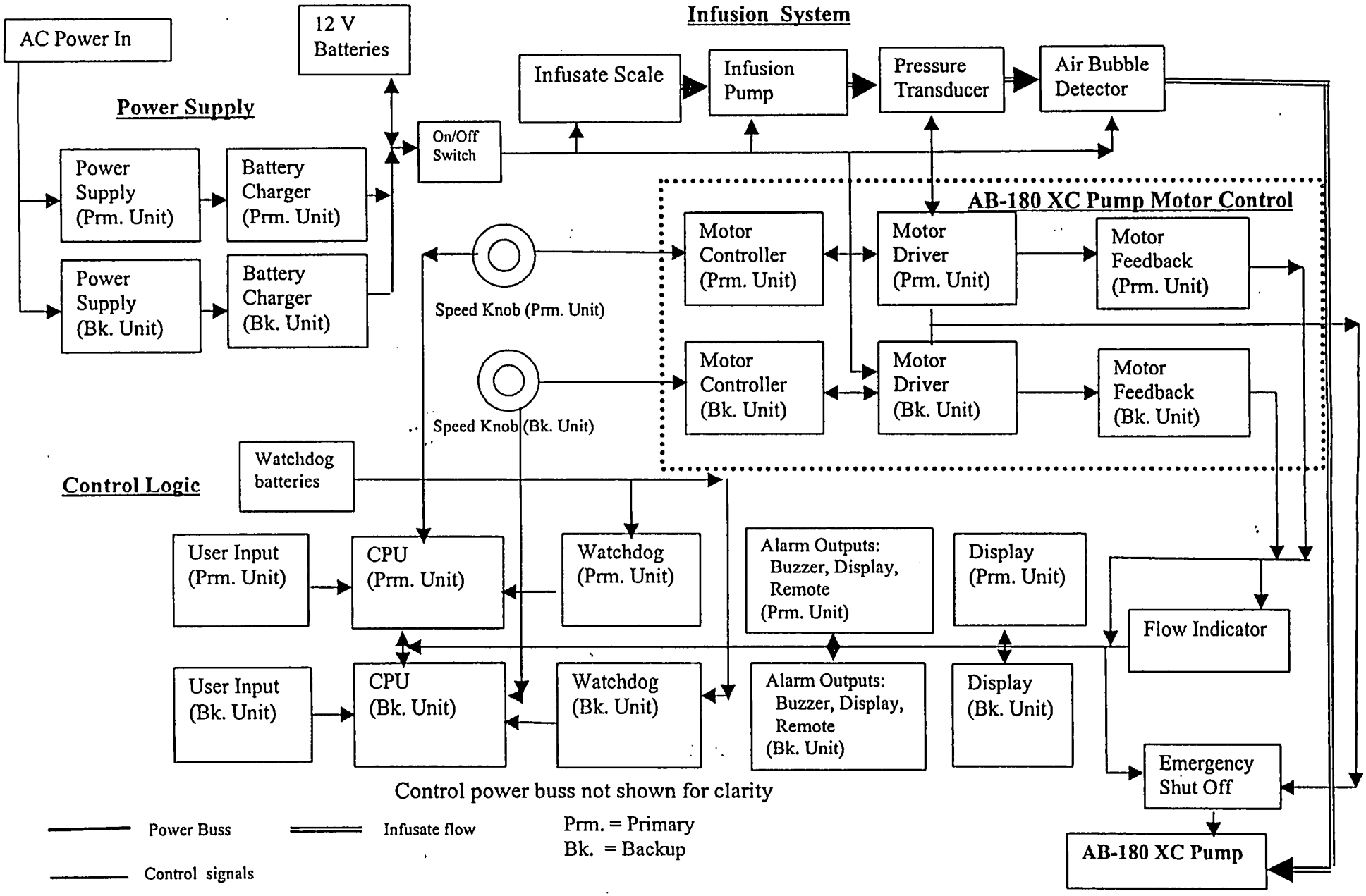
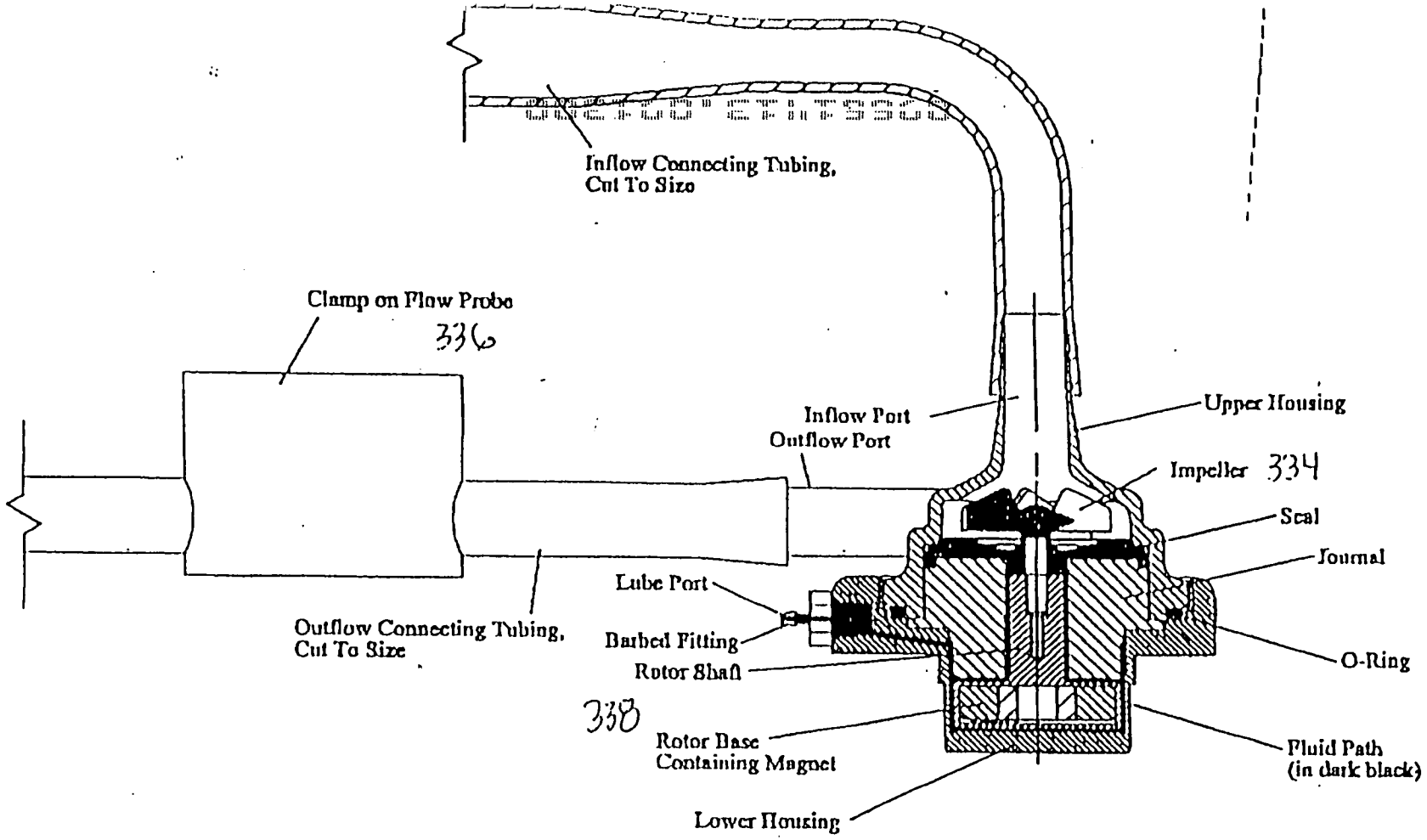

Infusion System
AC Power In
12 V Batteries
Power Supply
Infusate Scale
Infusion Pump
Pressure Transducer
Air Bubble Detector
On/Off Switch
Power Supply (Prm. Unit)
Battery Charger (Prm. Unit)
Power Supply (Bk. Unit)
Battery Charger (Bk. Unit)
AB-180 XC Pump Motor Control
Motor Controller (Prm. Unit)
Motor Driver (Prm. Unit)
Motor Feedback (Prm. Unit)
Speed Knob (Prm. Unit)
Motor Controller (Bk. Unit)
Motor Driver (Bk. Unit)
Motor Feedback (Bk. Unit)
Speed Knob (Bk. Unit)
Control Logic
Watchdog batteries
User Input (Prm. Unit)
CPU (Prm. Unit)
Watchdog (Prm. Unit)
Alarm Outputs: Buzzer, Display, Remote (Prm. Unit)
Display (Prm. Unit)
Flow Indicator
User Input (Bk. Unit)
CPU (Bk. Unit)
Watchdog (Bk. Unit)
Alarm Outputs: Buzzer, Display, Remote (Bk. Unit)
Display (Bk. Unit)
Emergency Shut Off
AB-180 XC Pump
Control power buss not shown for clarity
Power Buss
Infusate flow
Control signals
Prm. = Primary
Bk. = Backup

Figure 16e.


Inflow Connecting Tubing,
Cut To Size
Clamp on Flow Probe
336
Inflow Port
Outflow Port
Upper Housing
Impeller 334
Seal
Journal
Lube Port
Barbed Fitting
Rotor Shaft
O-Ring
Outflow Connecting Tubing,
Cut To Size
338
Rotor Base
Containing Magnet
Fluid Path
(in dark black)
Lower Housing

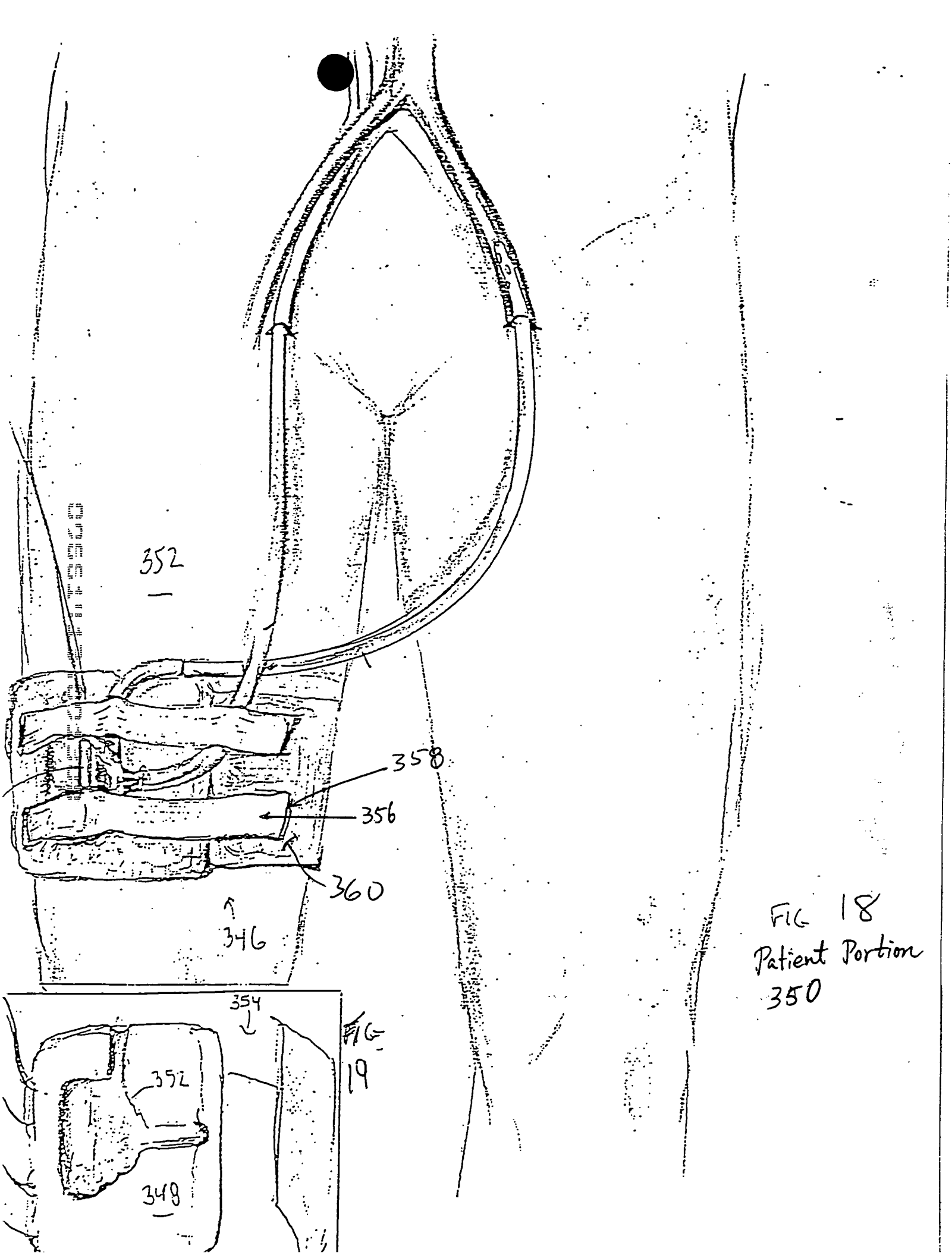


FIG 18
Patient Portion
350

FIG 19

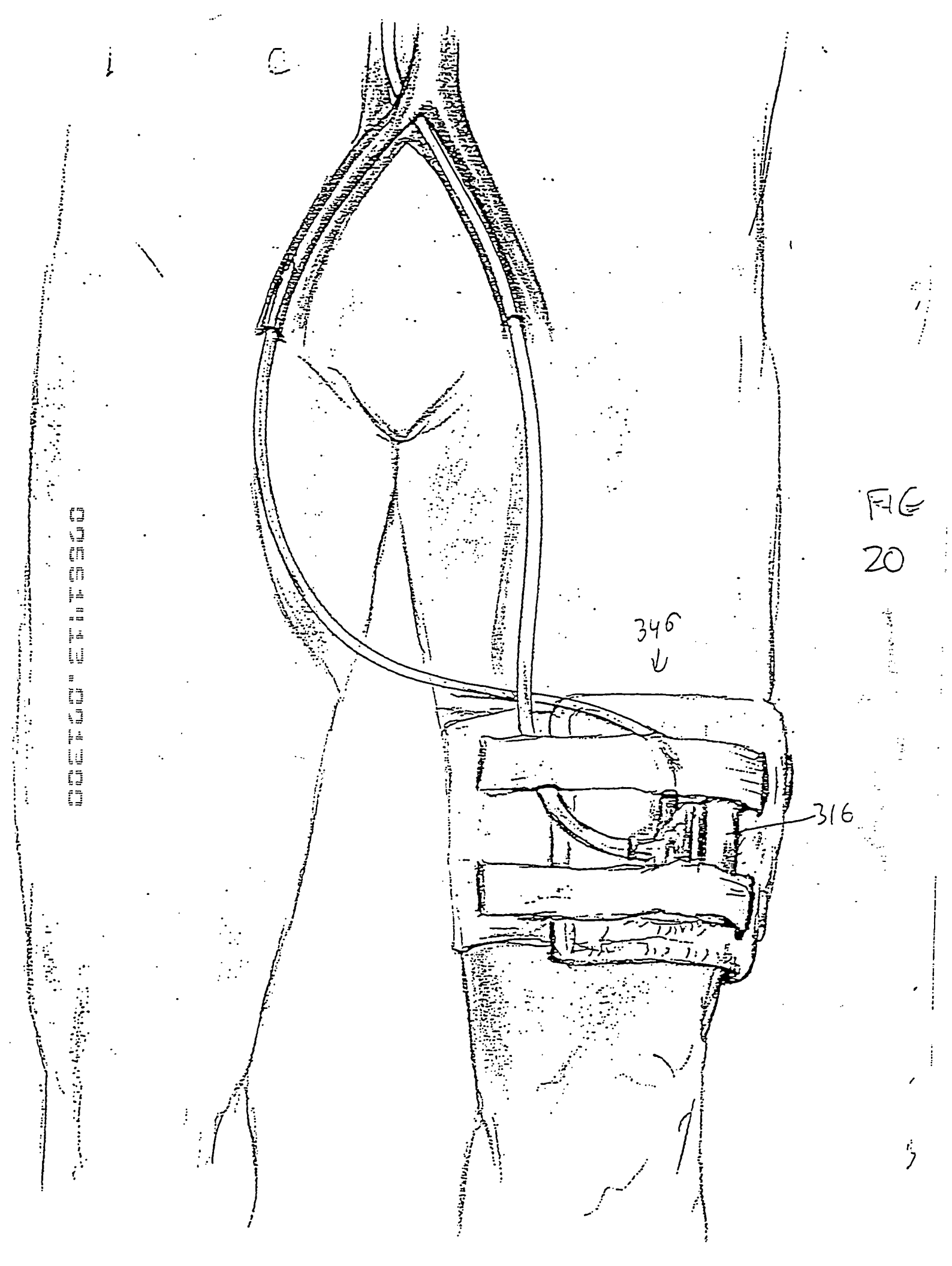


FIG 20

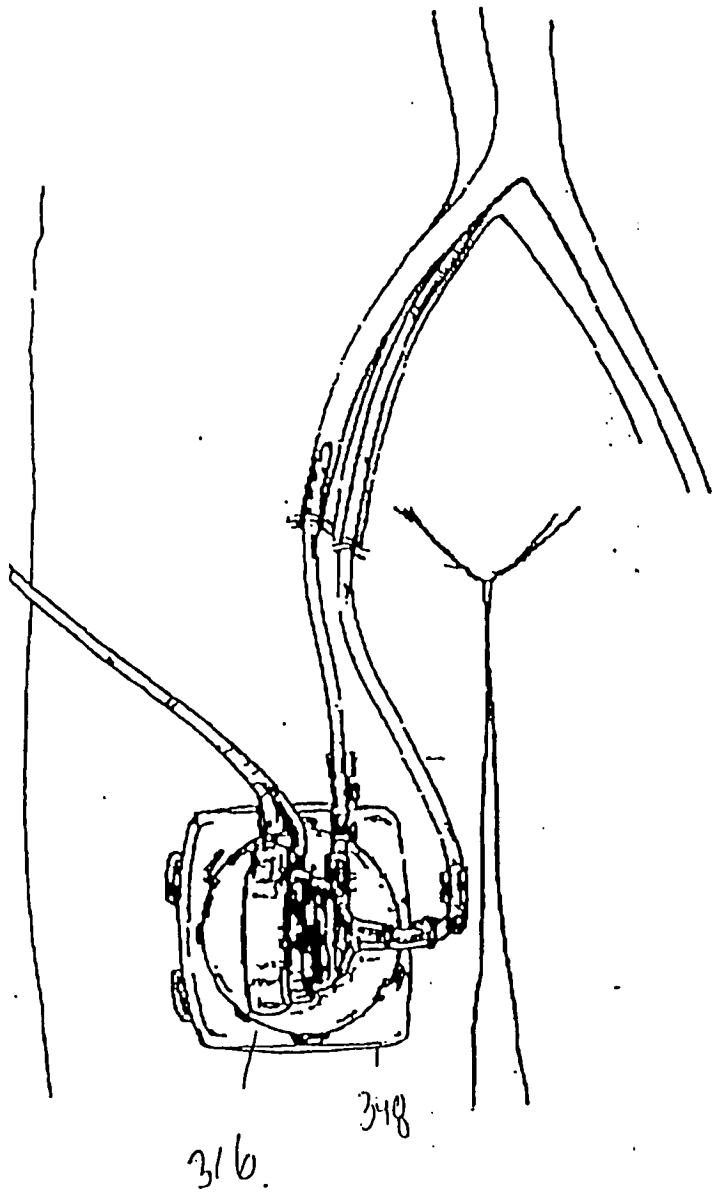


FIG 21

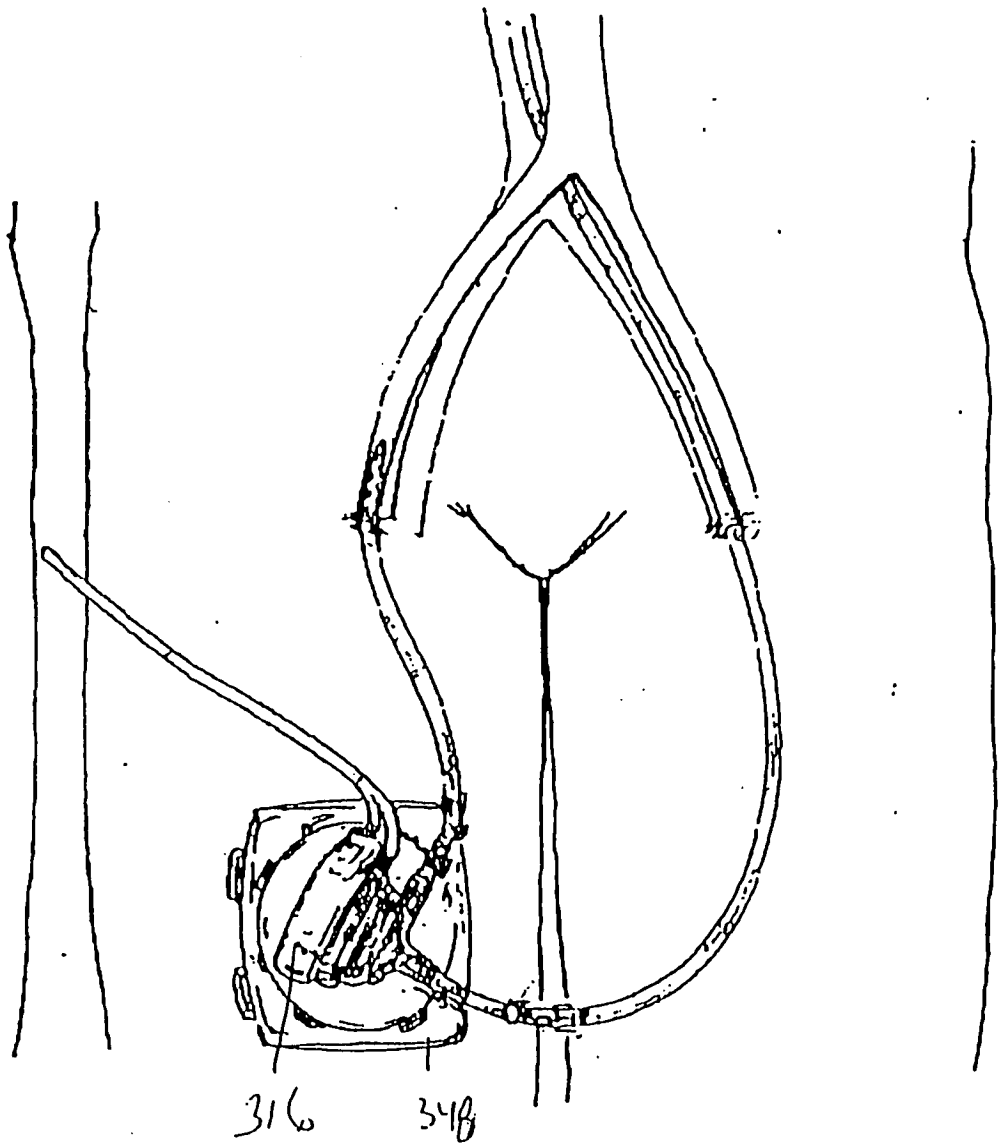


FIG 22

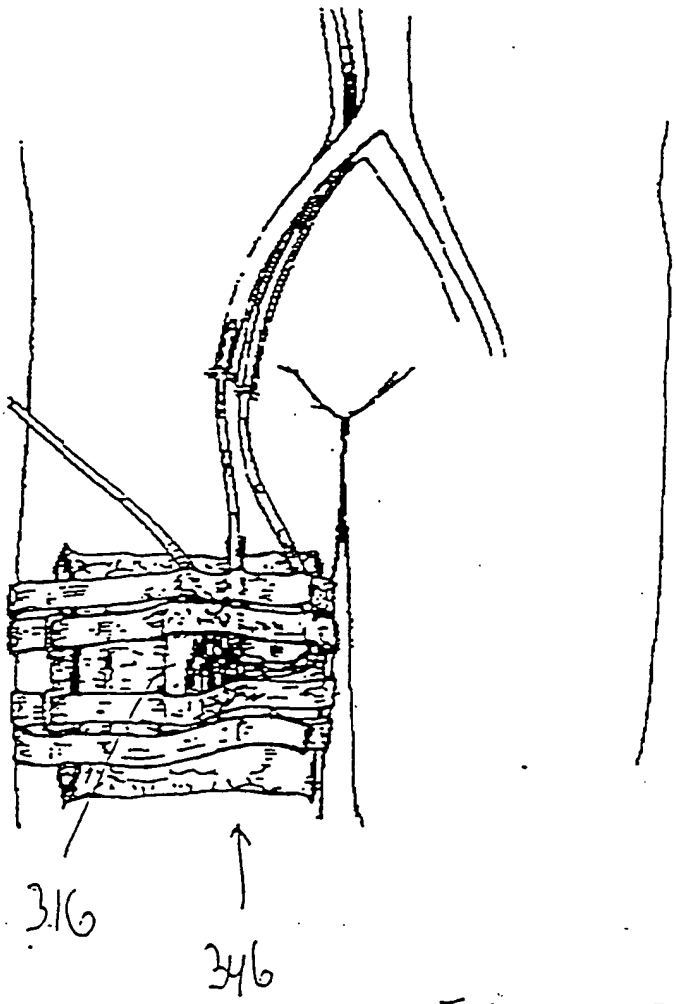
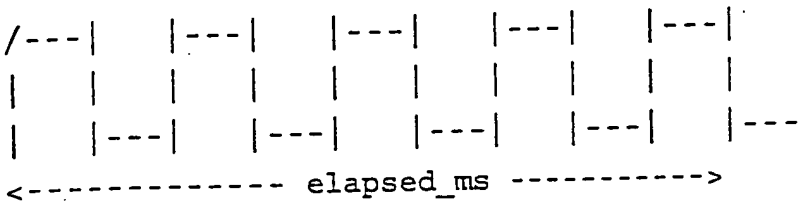


FIG 23



pulse rate = Number of trailing edges counted during the time interval.

elapsed_ms = Actual number of milliseconds in the time interval.

FIG 24

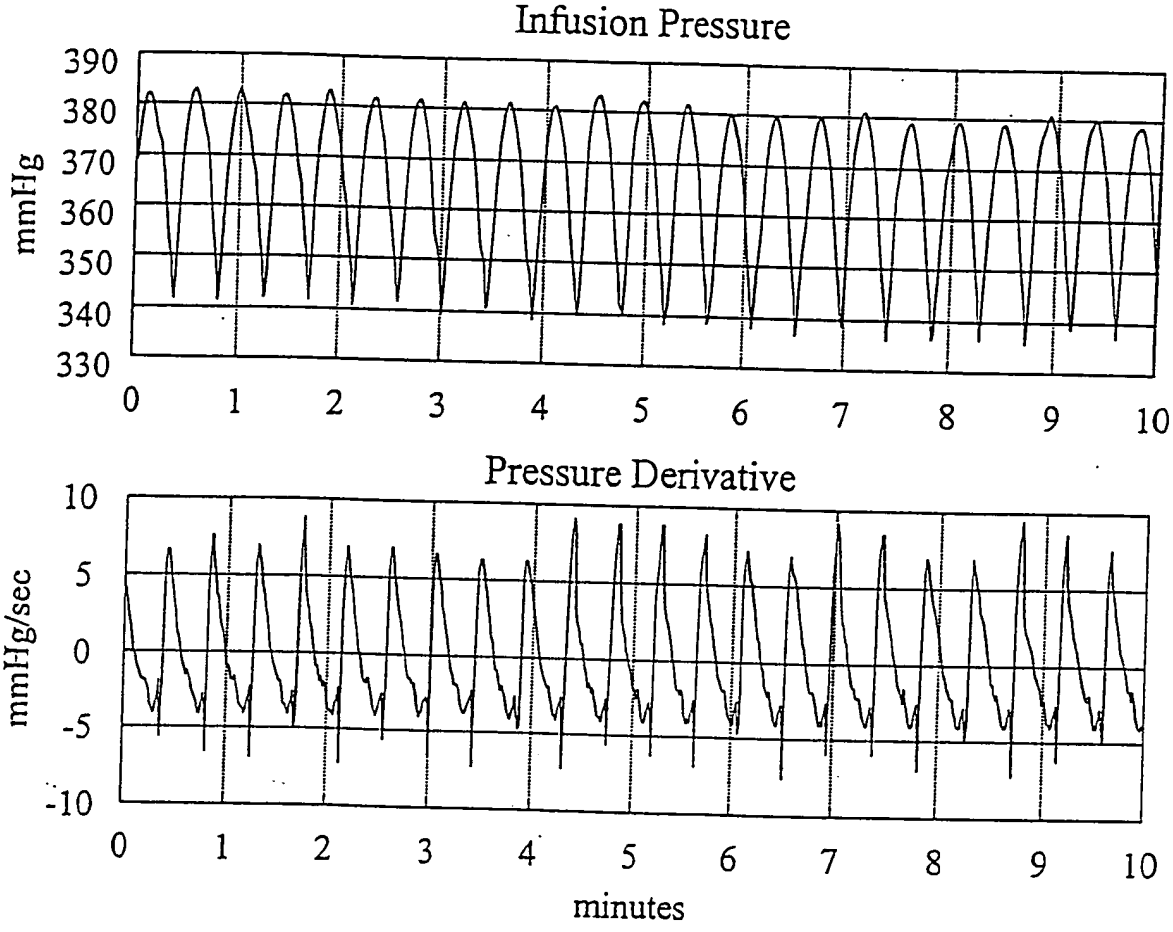

Infusion Pressure
390
380
370
360
350
340
330
mmHg
0 1 2 3 4 5 6 7 8 9 10
Pressure Derivative
10
5
0
-5
-10
mmHg/sec
0 1 2 3 4 5 6 7 8 9 10
minutes

FIG 25

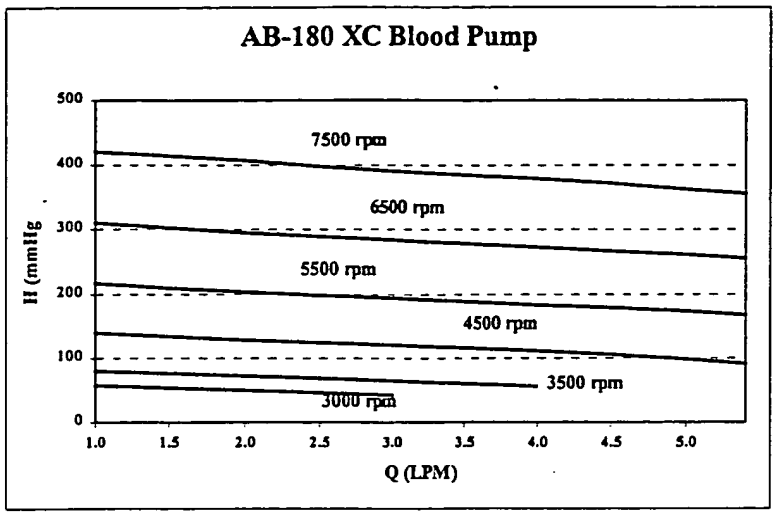


Figure 26a.

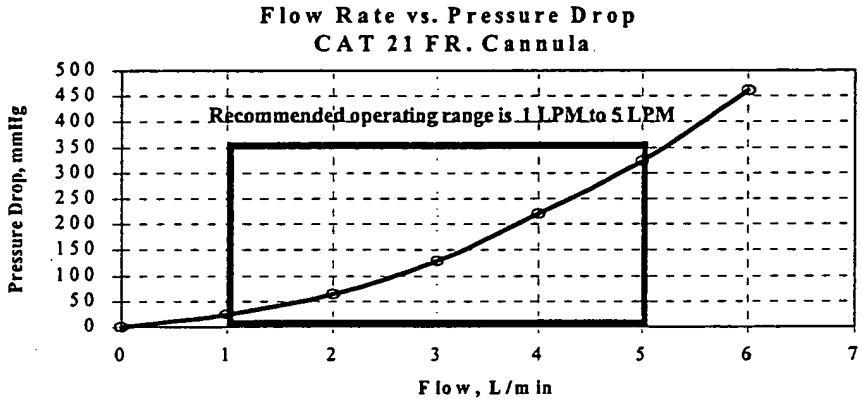
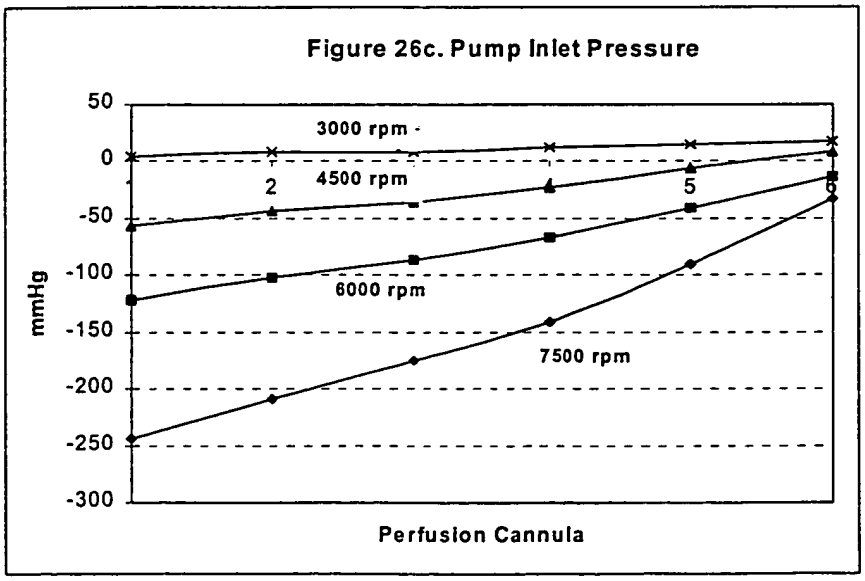
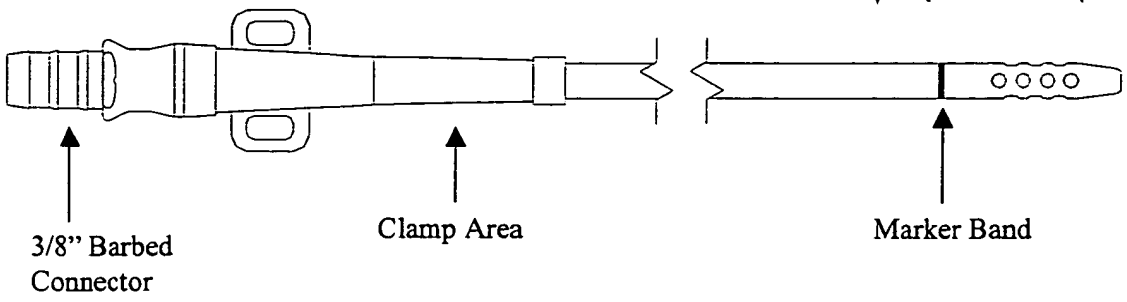


Figure 26b.



21 Fr. PVTC Cannula

FIG 27 c



13 Fr. PVTC Catheter

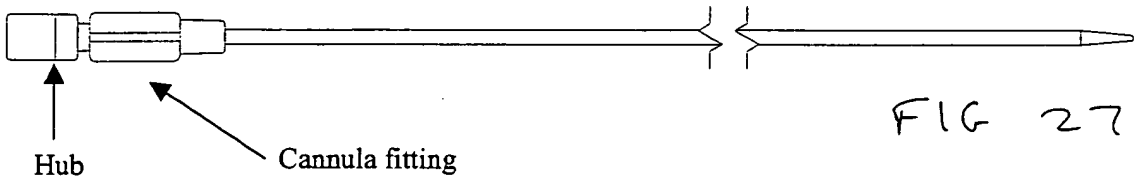


FIG 27b

14/21 Fr. PVTC Two Stage Dilator

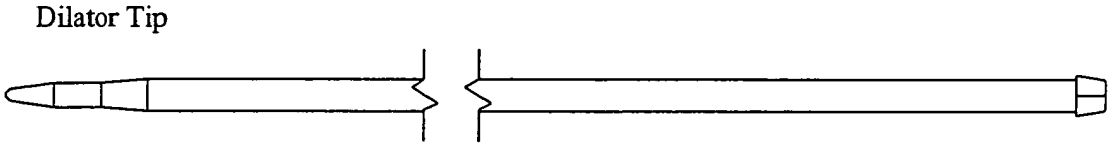


FIG 27 a

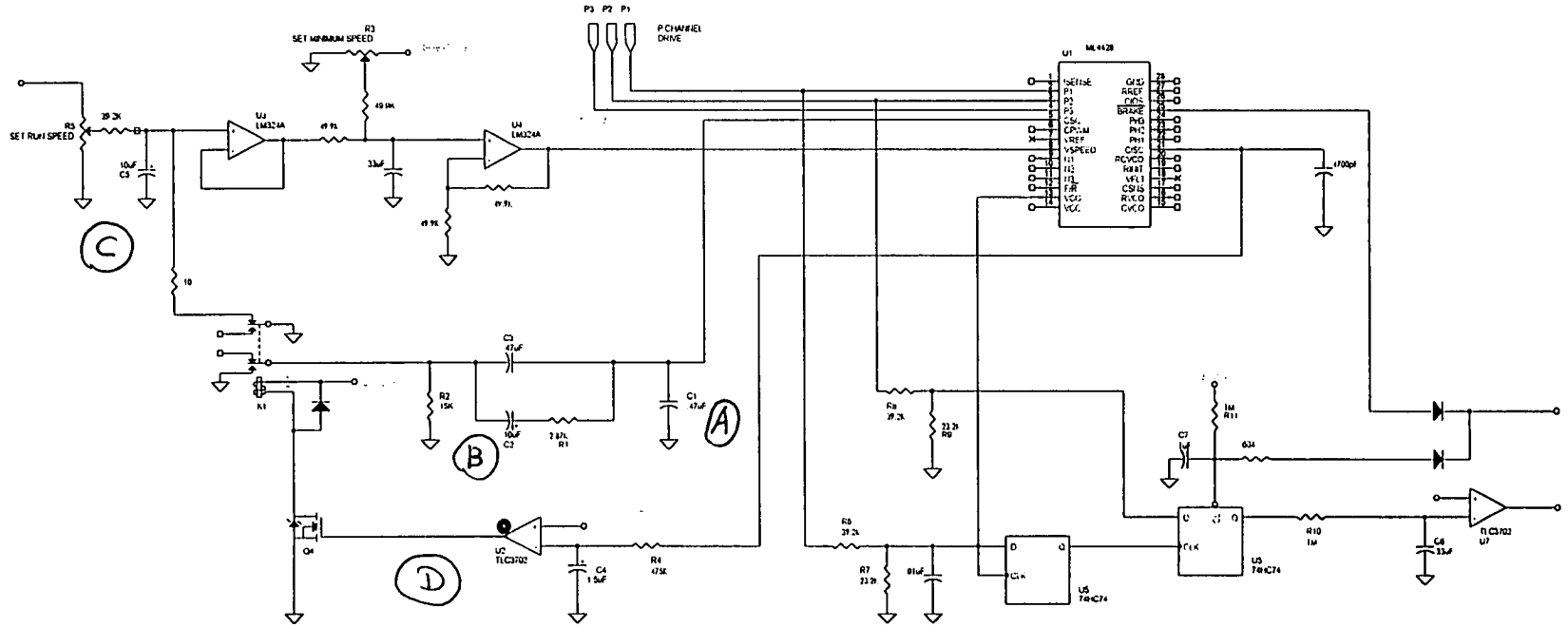

P3 P2 P1
P CHANNEL DRIVE
SET MINIMUM SPEED
SET RUN SPEED
U1
ML4428
U3
LM324A
U4
LM324A
U2
TLC3702
U5
74HC74
U6
74HC74
U7
TLC3702
A
B
C
D

FIG 28

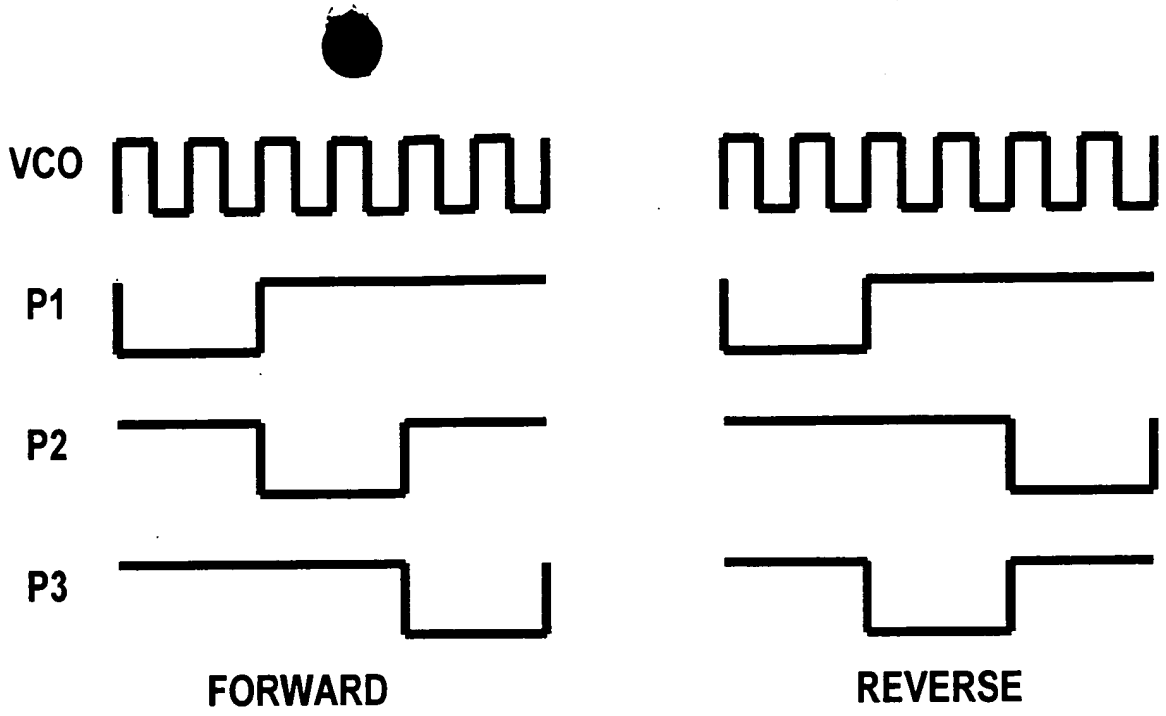


FIGURE 29